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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,618	12/12/2003	Raymond C. Kurzweil	14202-006001	1664
26161 7590 06/11/2009 FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER BEHNCKE, CHRISTINE M	
			ART UNIT 3661	PAPER NUMBER
			NOTIFICATION DATE 06/11/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/734,618

Applicant(s)

KURZWEIL, RAYMOND C.

Examiner

CHRISTINE M. BEHNCKE

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This office action is in response to the Amendment and Remarks filed March 12, 2009, in which claims 1-26 were presented for examination.

Response to Arguments

Applicant's arguments filed March 12, 2009, with regards to claims 2 and 16 have been fully considered but they are not persuasive. Applicant contends the applied reference Biocca does not teach, suggest or describe overlaying a virtual environment over one or more portions of the video image to form a virtual scene. The Examiner respectfully disagrees. Biocca teaches the transmitted images being morphed and viewed by the user "that blends physical with virtual objects with which users can interact and manipulate" ([0010]). Biocca describes several embodiments wherein the virtual reality being transmitted to the user's display are overlaid to form a virtual scene, as references below. The broadest reasonable interpretation of the claim language is met by the descriptions and combination of the applied references.

Applicant's arguments with regards to the newly amended portions of claims 1 and 15 have been considered but they are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-10, 13-21, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abbasi, US 6,786,863, in view of Yee, US 6,016,385, in further view of Biocca, US 2002/0080094, and Saylor, US 7,455,827

Abbasi describes a remote physical contact system and method wherein a camera is coupled to a first surrogate, the camera capturing an image of a first, physical location in which the surrogate is disposed (camera 35A, element 160, location of user 10), and producing a first video image signal from the first captured image (video Figure 5, column 2, lines 54-58); a processor that receives the first video image signal (Figure 5, column 2, lines 54-58), an adapter to send the first video image signal to a communications network (computer 15, Figures 1 and 5) and receive a second, video image signal from the communication network (Figure 5), the second video image signal of a second, different physical location (camera 35B, element 165, location of user 20); and a display to display the second video image of the second, different physical location (display of computer 15). Abbasi further describes the surrogate having tactile sensors positioned along the exterior of the surrogate, the sensors sending first tactile signals to the communications network (figure 4); a body suit having tactile actuators, the tactile actuators receiving second tactile signals from the communications network (column 6, lines 17-42); motion sensors positioned throughout the body suit (Figure 3), the motion sensors sending first motion signals corresponding to movements of each sensor relative to a reference point (column 5, lines 28-45), the first motion signals transmitted to the communications network (Figure 5); and wherein the surrogate is a first surrogate (Figure 1). Abbasi describes a second surrogate at a second location (surrogate 165), the second surrogate receiving, from the communications network (Figure 5), the first motion signals from the motion sensors (column 6, lines 17-42), the first motion signals from the motion sensors causing a movement of the second

surrogate that is correlated to a movement of the body suit (column 6, lines 17-42).

Abbasi further describing that the second surrogate includes motion actuators corresponding to the motion sensors (Figure 4), the motion actuators causing the second surrogate to move (column 5, lines 28-45). Abbasi further describes wherein the second surrogate comprises a microphone coupled to the second surrogate (microphone 40B), the microphone for sending audio signals (Figure 5), corresponding to sounds in the second physical location (Figure 1), to the communications network (network 30); a first microphone coupled to the first surrogate (microphone 40A); a second surrogate in the second location, the second surrogate supporting a second microphone and a second camera (Figure 1, elements 40B, 35B); and a second display in the second location to receive the first video image signals (display of computer 25) and a second speaker to receive the audio signals from the first microphone (element 45B).

Abbasi further describes a first communication gateway in the first location (computer 15); a second processor in the second location to process video from the second location (computer 25); and a second communication gateway in the second location (Figure 1), the second processor connected to the first processor via the communication network (computer network 30).

Abbasi does not describe morphing the captured video image, sounds transmitted are in connection with a theme of the morphed image signal and does not describe wherein the displays are a set of goggles or explicitly that the surrogate is a humanoid robot.

However, Yee teaches a remotely controlled robot by an operator reacting to feedback signals originating at the robot, the robot (second location surrogate) is a humanoid robot (Figure 3); a camera coupled to the robot, capturing an image of a first, physical location (cameras 22, figure 1) and a set of goggles to display the second video image of the second, different physical location (element 24, column 5, lines 11-37); the robot having tactile sensors positioned along the exterior of the robot (column 7, lines 49-58) that are transmitted to the operator that have tactile actuators that receive tactile signals (column 4, lines 5-8 and column 8, lines 10-15). Yee further teaches wherein the robot comprises a body (element 34); a microphone coupled to the body, the microphone for sending audio signals (column 4, line 51-column 5, line 10), corresponding to sounds in the second physical location, to the communications network (column 4, line 51-column 5, line 10); wherein the set of goggles further include a transducer to render the audio signals, received from the communication network, corresponding to the sounds in the second physical location (column 5, lines 1-10, figure 1); wherein the set of goggles, comprising a wireless receiver to wirelessly receive the video image (column 9, lines 9-11); and wherein the robot comprises a transmitter to wirelessly send the audio signals, the tactile signals, the motion signals and the video image to the communications network (column 9, lines 9-11).

It would have been obvious to one of ordinary skill in the robotic and communications arts to combine the inventions of Abbasi in view of Yee because as Abbasi suggests the remote communication would be enhanced with the inclusion of tactile or other physical stimulus from one human user to another, which "enables

people to expand on the notion of teleconferencing or computer communications by adding a capability to engage in all types of physical contact" (column 1, lines 60-63). Further Abbasi describes that the surrogate can be "any anatomical component" (column 2, lines 3-4) to create contact messages to reflect the physical state of the surrogate, therefore it would have been further obvious to one of ordinary skill in the robotic field to use the remote robotic control system of Yee, because the robot Yee teaches would allow the operator to sense the same environment the robot is in (column 1, lines 20-27).

Neither Abbasi nor Yee describe that the image acquired by the camera but do not describe wherein the image is morphed and overlays the image on a virtual scene. However, Biocca teaches a teleportal system to provide remote communication to a plurality of users, wherein a processor that receives a first video image signal, morphs the first video image signal and sends the morphed image signal to a second, physical location to be displayed ([0037]), wherein the display is integrated with the set of goggles (integrated with the headset of the user, [0045], [0050]); and wherein the processor overlays a virtual environment over one or more portions of the video image to form a virtual scene (figures 13 and 14, [0012], [0044], [0045], [0049], [0050]). It would have been obvious to one of ordinary skill in the robotic and communication arts, to morph the acquired image because as Biocca suggests, morphing the image and overlaying the image allows the image to be perceived in a user preferred 3D or stereoscopic view that gives a more realistic view of the second location ([0038]-[0039]). Biocca teaches that it is an obvious variation to project the image on lens or displays

coupled to the headgear, thus allowing the user to move outdoors ([0044], [0051]). Further it would have been very obvious to one of ordinary skill in the communication arts to duplicate the morphing process at the second location to send the first location, this would have provided the predictable result of the stereoscopic or overlaid view as taught by Biocca, and the duplication is suggested by Abbasi's description of enhanced communication.

Both Abbasi and Yee describe communicating sounds to the user that are received at a remote location, but neither expressly describes sending sounds in connection with a theme of a morphed image. However, Saylor teaches simulating audio communications over a computer network wherein the sounds are in connection with a theme of a virtual reality simulation system being displayed to a user (column 3, lines 39-47). It would have been obvious to one of ordinary skill in the remote communication arts to combine the teachings of Saylor with the invention of Abbasi, in view of Yee and Biocca, because Saylor teaches further means of achieving realism for a simulated environment, as the other references, by processing the audio signals to sound like the actual sound depending on the conditions/themes chosen by the user (column 1, lines 22-28).

Claim Rejections - 35 USC § 103

Claims 11, 12, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abbasi in view of Yee and Biocca as applied to claims 7 and 20 above, and further in view of Simmons, US 2003/0030397.

Abbasi in view of Yee and Biocca describe the system and method of a virtual reality encounter system as applied previously. Neither Abbasi, Yee, nor Biocca teach that the body of the robot includes that the cameras are positioned in the eye sockets and the microphone of the robot is positioned in the ear canal. However, Simmons teaches a system and method of controlling a robot remotely, wherein the robot is a humanoid robot (figure 5); the robot includes an eye socket and the camera is positioned in the eye socket ([0026]); and the robot includes an ear canal wherein the microphone is positioned in the ear canal ([0016]). It would have been obvious to one of ordinary skill in the art to combine the invention of Abbasi in view of Yee and Biocca with the teachings of Simmons because as Simmons suggest, placing the sensors in the position corresponding to the human sensors aligns the sensors to the perspective of the use and better reflects the environment to the perspective of the user ([0026]) thereby giving a more realistic perception.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE M. BEHNCKE whose telephone number is (571)272-8103. The examiner can normally be reached on 8:30 am- 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas G. Black/
Supervisory Patent Examiner, Art Unit 3661